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☐ 1. Document ID: JP 2001156003 A

L18: Entry 1 of 6

File: DWPI

Jun 8, 2001

DERWENT-ACC-NO: 2002-219540

DERWENT-WEEK: 200228

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TITLE: P-type gallium nitride group semiconductor manufacture for luminescent element, involves forming zinc layer at specific temperature on gallium nitride layer, and temperature is lowered in nitrogen gas atmosphere

Basic Abstract Text (1):

NOVELTY - A magnesium doped gallium nitride layer (600) is formed on a sapphire substrate (100) by reduced pressure vapor growth method. Zinc film (700) is formed on the gallium nitride layer at a temperature of 400 deg. C or more, and a temperature drop is performed in nitrogen gas atmosphere.

Basic Abstract Text (4):

ADVANTAGE - When pressure reduction method is used, mass production manufacture of semiconductor is enabled. When zinc is used instead of N-type gallium nitride, luminescent element with low operating voltage is obtained.

Basic Abstract Text (5):

DESCRIPTION OF DRAWING(S) - The figure shows the sectional view of P-type gallium nitride group semiconductor. (Drawing includes non-English language text).

Standard Title Terms (1):

P TYPE GALLIUM NITRIDE GROUP SEMICONDUCTOR MANUFACTURE LUMINESCENT ELEMENT FORMING ZINC LAYER
SPECIFIC TEMPERATURE GALLIUM NITRIDE LAYER TEMPERATURE LOWER NITROGEN GAS ATMOSPHERE

[Full](#) [Title 2](#) [Citation](#) [Front](#) [Review](#) [Classification](#) [Date](#) [Reference](#) [Sequences](#) [Attachments](#)[KMC](#) [Draw Desc](#) [Image](#)☐ 2. Document ID: JP 2001247399 A, US 2001015437 A1, JP 2001210657 A

L18: Entry 2 of 6

File: DWPI

Sep 11, 2001

DERWENT-ACC-NO: 2001-638415

DERWENT-WEEK: 200173

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TITLE: Gallium nitride crystal layer production involves doping gallium nitride crystal with acceptor-type impurities from calcium, magnesium, or zinc during epitaxial growth

Basic Abstract Text (1):

NOVELTY - A gallium nitride crystal (3, 4) is formed by doping a gallium nitride crystal with acceptor-type impurities selected from carbon (C), magnesium (Mg), or zinc (Zn) during epitaxial growth.

Basic Abstract Text (3):

(a) a gallium nitride (GaN) field-effect transistor (FET) having a GaN layer, and a gate metal-insulator-semiconductor (MIS) structure formed on the GaN layer with an aluminum nitride (AlN) or aluminum gallium nitride (AlGaN) layer comprising a high resistance GaN crystal layer of the above crystal;

Standard Title Terms (1):

GALLIUM NITRIDE CRYSTAL LAYER PRODUCE DOPE GALLIUM NITRIDE CRYSTAL ACCEPT TYPE IMPURE CALCIUM MAGNESIUM ZINC EPITAXIAL GROWTH

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☐ 3. Document ID: US 5998232 A

L18: Entry 3 of 6

File: DWPI

Dec 7, 1999

DERWENT-ACC-NO: 2000-104609

DERWENT-WEEK: 200009

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TITLE: Introducing impurities into crystalline film of nitride-based compound semiconductor substrate for manufacture of light emitting diode or laser diode

Basic Abstract Text (2):

DETAILED DESCRIPTION - The substrate may be sapphire, spinel or silicon carbide. The lower and additional layers may be gallium nitride, aluminum nitride, indium nitride, thallium nitride, scandium nitride, yttrium nitride, lanthanum nitride, and any alloys, mixture and combination of these. The topmost layer comprises undoped gallium nitride, or an alloy of indium nitride and gallium nitride. The n-type dopant is either silicon, germanium, oxygen, sulfur or mixtures of these. The p-type is either beryllium, magnesium, calcium, carbon, zinc or a mixture of these.

Standard Title Terms (1):

INTRODUCING IMPURE CRYSTAL FILM NITRIDE BASED COMPOUND SEMICONDUCTOR SUBSTRATE MANUFACTURE LIGHT EMIT DIODE LASER DIODE

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☐ 4. Document ID: JP 06069543 A

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File: DWPI

Mar 11, 1994

DERWENT-ACC-NO: 1994-122385

DERWENT-WEEK: 199415

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TITLE: Light emitting element of gallium-nitride cpd. semiconductor - formed by causing a layer of I-type gallium-nitride cpd. semiconductor to comprise zinc-doped I layer and magnesium-doped layer to obtain given blue radiation NoAbstract

Standard Title Terms (1):

LIGHT EMIT ELEMENT GALLIUM NITRIDE COMPOUND SEMICONDUCTOR FORMING CAUSE LAYER TYPE GALLIUM NITRIDE COMPOUND SEMICONDUCTOR COMPRISE ZINC DOPE LAYER MAGNESIUM DOPE LAYER OBTAIN BLUE RADIATE NO ABSTRACT

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5. Document ID: JP 04163968 A

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File: DWPI

Jun 9, 1992

DERWENT-ACC-NO: 1992-239843

DERWENT-WEEK: 199229

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TITLE: Gallium-arsenide light-emitting diode - has I-type aluminium-gallium-nitride semiconductor layer in which zinc and magnesium are doped NoAbstract

Standard Title Terms (1):

GALLIUM ARSENIDE LIGHT EMIT DIODE ALUMINIUM GALLIUM NITRIDE SEMICONDUCTOR LAYER ZINC MAGNESIUM
DOPE NOABSTRACT

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6. Document ID: US 3770518 A

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File: DWPI

DERWENT-ACC-NO: 1973-70272U

DERWENT-WEEK: 197346

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TITLE: Gallium arsenide semiconductors - with germanium as p-type dopant

Basic Abstract Text (1):

Ge is a superior p-type dopant to Zn, in GaAs semiconductor devices such as varactors, IMPATT diodes, photocathodes etc. Ge has a vapour press. at 700 degrees C of 7×10^{-11} torr and os is more easily controlled as a dopant source. Specif. claimed are p-n junction GaAs devices made by successively sliding a Ge-doped melt of GaAs in Ga and an n-doped melt of gaAs in Ga over a GaAs substrate.

Standard Title Terms (1):

GALLIUM ARSENIDE SEMICONDUCTOR GERMANIUM P TYPE DOPE

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| Terms | Documents |
|---|-----------|
| (gallium or Ga) adj (N or nitride) same (dop\$ same (zn or zinc)) and semiconductor | 6 |

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